

## PATENT SPECIFICATION

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## PROVISIONAL SPECIFICATION

No. 21771 A.D. 1935.

## Improvements in or relating to Spectacle-Frames and the like

I, KENELM EDWARD LEE GUINNESS, a British Subject, of Melbury, Kingston Hill, Surrey, do hereby declare the nature of this invention to be as follows:—

5 This invention is for improvements in or relating to spectacle-frames and the like of the kind in which the lens-frames are connected by a rigid, that is to say non-folding, bridge. In such frames as usually made, the side-pieces both fold 10 down across the back of the lenses, that is to say the side nearer the eyes when the spectacles are in use.

15 The present invention comprises a spectacle-frame of the kind above described, wherein one of the side-pieces is so connected to the lens-frame that it can be folded down across the front of the lenses, whilst the other is folded in the usual 20 manner across the back of the lenses, to provide protection for both the front and back of the lenses and their frame.

25 According to another feature of this invention the hinge of one of the side-pieces has its hinge-plate on the lens-frame connected thereto by a pivot whose axis lies along the length of the lens-frame, to permit rotation of the plate and the side-piece connected to it from the 30 back to the front of the lens-frame.

35 According to another feature of this invention, means are provided for securing the free end of each side-piece to the lens-frame when it is in this folded position, to constitute with the lens-frame a reinforced braced structure. The said 40 securing means is such as to prevent relative movement between the side-piece and lens-frame longitudinally of the side-piece and may be constituted by a pin upstanding on the side-frame engaging a hole in or near the end of the side-piece.

45 In a particular construction of this invention, which will now be described by way of example, the lens-frame and one of the side-pieces may be of any usual or desired construction, such that the side-piece folds in the usual way across the 50 back of the lenses. The other side piece

is secured to the side-piece in the usual manner, but the other plate is arranged to lie against the end of the lens-frame, and is engaged therewith by a central pivot pin whose axis is horizontal, when the 55 spectacles are in use, that is to say the axis lies along the length of the lens-frame towards the hinge of the other side-piece. This hinge-plate is rotatable on the pivot pin so that the side-piece which 60 it carries can be swung over so as to project towards the front of the lenses instead of the back, and when in this position can be folded down against the front of the lenses. 65

The side-pieces are shaped in the usual manner, or their hinge-pins are offset, so that they can lie substantially flat against the lenses, and since the hinge-plate of the adjustable side-piece is bodily rotatable, the side-piece can lie against the 70 front of the lenses in a similar position to that of the other side-piece lying against the back of the lenses.

75 In this way a certain amount of protection is provided for the lenses and lens-frame on both sides, but the protection is very much enhanced by the further provision of securing the free ends of the side-pieces to the lens-frame. At a suitable position opposite the free end of the 80 side-piece, a small pin is rigidly fixed to be upstanding from the general plane of the lens-frame, and a hole is formed at or near the end of the side-piece to be a conveniently tight fit on this pin. When 85 the side-piece is folded and engaged with this pin, it constitutes a bracing member rigidly secured at both ends to the lens-frame and the two side-pieces thus form 90 with the lens-frame a strongly reinforced braced structure so that the frame is rendered very much stronger than those of ordinary construction, and it can safely be carried, for example in a pocket, with- 95 out the usual stout or stiff case which is required to safeguard the spectacle-frame against breakage.

The frame may be constructed of any desired material, and if special strength 100

is required the side-pieces may be made of metal, such as aluminium alloy, and they may be made of a U-section, so that they are particularly rigid in themselves; 5 in this case the resilience which is required in use may be obtained by providing a small spiral spring housed within the U-section and connecting the side-piece to an off-set anchorage near the 10 hinge, so that it tends to fold the side-

piece to its closed position. It is to be understood that the invention may be applied to spectacle-frames and side-pieces made of any usual or desired material.

Dated this 31st day of July, 1935.  
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# PROVISIONAL SPECIFICATION

No. 23465 A.D. 1935.

## Improvements in or relating to Spectacle-Frames and the like

15 I, KENELM EDWARD LEE GUINNESS, a British Subject, of Melbury, Kingston Hill, Surrey, do hereby declare the nature of this invention to be as follows:—

This invention is for improvements in 20 or relating to spectacle-frames and the like, and is cognate with the invention described in the specification of my application for Letters Patent No. 21771/35.

In the said specification there is 25 described a spectacle frame in which one of the side pieces is rotatable from the back to the front of the lens-frame about an axis lying along the length of the lens-frame. According to the present inven- 30 tion, means are provided for locating the side-piece, as regards rotation about said axis, in the same plane as the other side-piece, when the rotatable side-piece is projecting rearwardly from the lens- 35 frame; that is to say, when the spectacles are in use. Locating means may be also provided to hold the rotatable side-piece in the correct position for being folded over the front of the lenses when the said 40 side-piece is projecting forwardly from the lens-frame. The said locating means may be constituted by a yielding detent such as a spring on the lens-frame which co-operates with a non-circular part of 45 the hinge-plate of the side-piece.

In a specific embodiment of the present invention the rotatable side-piece has one hinge-plate affixed to it in the usual 50 manner and the other hinge-plate pivotally mounted on a pin projecting endwise from the end of the lens-frame, as described in specification No. 21771/35 aforesaid.

According to the present invention, the 55 end of the lens-frame adjacent to the rotatable side-piece carries a short strip of springy metal attached to its rear face, lying along the length of the lens-frame and projecting by a short distance beyond 60 it so as to engage with the edge of a rectangular portion of metal formed as an inward extension of the hinge-plate which

is engaged by the pivot-pin. When the 65 side-frame projects rearwardly from the lens-frame (that is to say, when the spectacles are in use) one edge of the rectangular portion is engaged by the spring which thus resiliently holds the side-piece 70 in its correct position. When the side-piece is rotated about the pivot-pin so as to project forwardly from the lens-frame, the spring engages with the opposite edge of the rectangle so as to locate the side- 75 piece resiliently in this position also.

Where the lens-frame is of real or arti- 75 ficial horn or shell the end which receives the hinge-plate is normally reinforced by a metal angle. In the present invention the end wall of this angle carries the 80 pivot-pin above described, and the other wall, which lies along the rear face of a portion of the frame lying beyond the lens, has the spring aforesaid attached to it by a single screw at its end remote from 85 the side-piece and is restrained against rotation about the screw by a guide-pin affixed to the said metal angle and projecting through the spring at the other end.

The said rectangular extension is pre- 90 ferably of the same width as the hinge-plate of which it forms a part, and is of such dimensions that its forward edge lies flush with the front surface of the lens- 95 frame and with the forward end of the adjacent hinge-plate when the spectacles are being worn. By such a construction the locating means is hardly noticeable when the spectacles are being worn. The 100 corners of the rectangular portion may be slightly chamfered or rounded so as to facilitate deliberate rotation of the side-piece about the pivot-pin.

In a modified form of the invention the 105 spring aforesaid, instead of being in the form of a flat strip of metal may take the form of a U-shaped length of steel wire, one limb being anchored to the lens frame and the other co-operating with the non- 110 circular part of the hinge-plate. By the

use of a U-shaped spring, its overall dimensions may be reduced for the same degree of flexibility. If desired the spring may be concealed by being disposed between the metal angle aforesaid and the material of the lens-frame.

It will be seen that the present invention renders the spectacle-frame more rigid when the spectacles are being worn

and facilitates the operation of folding the rotatable side-piece into its correct position against the front of the lens-frame.

Dated this 21st day of August, 1935.

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## COMPLETE SPECIFICATION

### Improvements in or relating to Spectacle-Frames and the like

I, KENELM EDWARD LEE GUINNESS, a British Subject, of Melbury, Kingston Hill, Surrey, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention is for improvements in or relating to spectacle frames and the like of the kind comprising rigid side-pieces hinged to a lens-frame of which the two lens-holding portions are connected together by a rigid, that is to say non-folding, bridge. In such frames as usually made, the side-pieces both fold down across the back of the lenses, that is to say, the side nearer the eyes when the spectacles are in use; but it has also been proposed, in spectacles of the kind comprising a metal lens-frame and wire side-pieces, so to connect the side-pieces to the lens-frame that there is no abutment to limit the ordinary opening movement of the side-pieces which can therefore be rotated through a complete circle about axes which are vertical when the spectacles are being worn. However, in such proposal the side-pieces were incapable of providing any substantial protection to the lenses and, moreover, the construction suffered from the disadvantage that the spectacles were insufficiently rigid in use, owing to the omission of the abutments above referred to.

According to the present invention, in a spectacle frame or the like of the kind described, one of the side-pieces is connected to the lens-frame by a hinge of which the member adjacent the lens-frame is connected thereto by a pivot whose axis lies along the length of the lens-frame, whereby the said side-piece may be rotated about such lengthwise axis to the front of the lens-frame to enable it to be folded across the front of the lens-frame. The other side-piece is folded across the back of the lenses in the usual way so that when the spectacle-frame is folded up the side-pieces provide protection for both the front and the back of the lenses.

According to another feature of the

invention, means are provided for locating the free end of each side-piece with respect to the lens-frame when it is in the folded position, to constitute with the lens-frame a reinforced braced structure. The said locating means is such as to prevent relative movement between the side-piece and lens-frame longitudinally of the side-piece and may be constituted by a pin upstanding on the lens-frame and engaging a hole near the end of the side-piece.

According to another feature of the invention, means are provided for locating the side-piece as regards rotation about an axis lying along the length of the lens-frame, in the same plane as the other side-piece, when the rotatable side-piece is projecting rearwardly from the lens-frame. The locating means may also serve to hold the rotatable side-piece in the correct position for being folded over the front of the lenses when the said side-piece is projecting forwardly from the lens-frame. The said locating means may be constituted, for example, by a yielding detent such as a spring on the lens-frame which co-operates with a non-circular part of the hinge member of the side-piece.

A specific embodiment of the present invention will now be described by way of example with reference to the accompanying drawings of which:—

Figure 1 is a perspective view of a pair of spectacles according to the invention,

Figure 2 is a plan view showing the side-pieces in a position ready for being folded on to the lens-frame.

Figure 3 shows the side-pieces folded on to the lens-frame,

Figure 4 is a sectional view to an enlarged scale of the hinge between the rotatable side-piece and the lens-frame, and

Figure 5 is a view on the line 5—5 of Figure 4.

As shown in the drawings, the spectacles comprise a lens-frame 10 of ordinary construction and made of horn, artificial horn, or other suitable material. A side-piece 11 is pivoted to the lens-frame by

a hinge 12 having a hinge-plate 13. The side-piece 11 is made of light metal and is of channel section but its manner of connection to the lens-frame is similar to that used in spectacles of known construction.

The second side-piece 14 which is of channel section and of light metal like the side-piece 11 is pivoted about a vertical hinge-pin 15 to a hinge-plate 16. The plate 16 (see Figure 4) is connected to a fixed hinge-plate 17 of L-shaped section by a rivet or bolt 18, the fixed hinge-plate 17 being fixed to the lens-frame 10 by a screw 19. The rivet 18 is rotatable with respect to the plate 16 or the plate 17 or both so that the side-piece 14 can be rotated from the position shown in Figure 1 about an axis lying longitudinally of the lens-frame 10 into the position shown in Figure 2. If the side-pieces are now folded towards the lens-frame they will assume the position shown in Figure 3 in which the side-piece 11 lies at the back of the lenses in the ordinary way but the side-piece 14 lies over the front of the lenses.

The protection which the side-pieces give to the lenses and the lens-frame when folded into the position shown in Figure 3 is considerably increased by the provision of locating pins 20, 21 which engage holes 22, 23 in the side-pieces 14 and 11 respectively so that the side-pieces constitute with each other and with the lens-frame a reinforced braced structure, and any bending force applied to the lens-frame which would otherwise cause breakage of the frame or the lenses is resisted by a compression or tension in the side-pieces 11 and 14. If desired the pins 20 and 21 may be a tight fit in the holes in the side-pieces so as to retain them against movement away from the lens-frame. The pin 21 is preferably constituted, as shown in Figure 4, by an extension of reduced diameter from the screw 19.

The rotatable hinge-plate 16 of the side-piece 14 is of rectangular shape as shown in Figures 4 and 5 and this rectangular portion co-operates with a strip of springy steel 24 fixed under the margin of the fixed hinge-plate 17 in which position it is clamped by the screw 19 and presses by an edge 25 against the sides of the rectangular portion of the hinge-plate 16. The spring 24 thus acts as a detent and locates the side-piece 14 in a direction at right-angles to the lens-frame 10, that is to say in the position shown in Figure 1. There is thus no looseness between the lens-frame and the side-piece when the spectacles are being worn. When the side-piece 14 is rotated into the

position shown in Figure 2 the edge 25 of the spring 24 is pressed aside as shown by the dotted lines in Figure 5 until the hinge-plate has rotated through 180° when the spring again presses against the rectangular portion but on the opposite edge. The side-piece 14 is thus located in a convenient position for being folded as shown in Figure 3.

The side-pieces 11 and 14, being of metal, may be found to be less resilient than side-pieces of horn or artificial horn, and to overcome any disadvantage thus entailed, coiled springs (not shown) may be provided at the front ends so as to press the side-pieces into engagement with the wearer's head. Alternatively, as shown in the drawings, adjusting screws 26 may engage with pins 27, the end of each screw abutting against the appropriate hinge-plate to limit the distance through which the side-piece can be opened.

It will be seen that the detent spring 24 is very small and that the rectangular portion of the hinge-plate 16 is of the same size as the rectangular end of the lens-frame 10 so that the detent device is hardly noticeable when the spectacles are being worn. If desired, the corners of the rectangular portion may be chamfered or slightly rounded so as to facilitate deliberate rotation of the side-piece 14 about the pin 18.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A spectacle-frame or the like of the kind described wherein one of the side-pieces is connected to the lens-frame by a hinge of which the member adjacent the lens-frame is connected thereto by a pivot whose axis lies along the length of the lens-frame whereby the said side-piece may be rotated about such lengthwise axis to the front of the lens-frame to enable it to be folded across the front of the lens-frame.

2. A spectacle-frame according to Claim 1 comprising means for locating the free end of each side-piece with respect to the lens-frame, when it is in its folded position, to constitute with the lens-frame a reinforced braced structure.

3. A spectacle-frame according to Claim 2 wherein each said locating means is constituted by a pin upstanding on the lens-frame and engaging a hole near the end of the side-piece.

4. A spectacle-frame according to Claim 1 comprising means for locating the said rotatable side-piece, as regards rotation about said pivot, in the same

plane as the other side-piece, when the rotatable side-piece is projecting rearwardly from the lens-frame.

5 5. A spectacle-frame according to Claim 4 wherein the said locating means also holds the rotatable side-piece in the correct position for being folded over the front of the lenses when the said side-piece is projecting forwardly from the lens-frame.

10 6. A spectacle-frame according to Claim 4 or Claim 5 wherein the said locating means is constituted by a yield-

ing detent on the lens-frame which co-operates with a non-circular part of the 15 hinge-member of the side-piece.

7. A spectacle-frame according to any of the preceding Claims substantially as herein described with reference to the accompanying drawings. 20

Dated this 9th day of July, 1936.  
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[This Drawing is a reproduction of the Original on a reduced scale.]

